

Figure 1
programmable
logic device 10

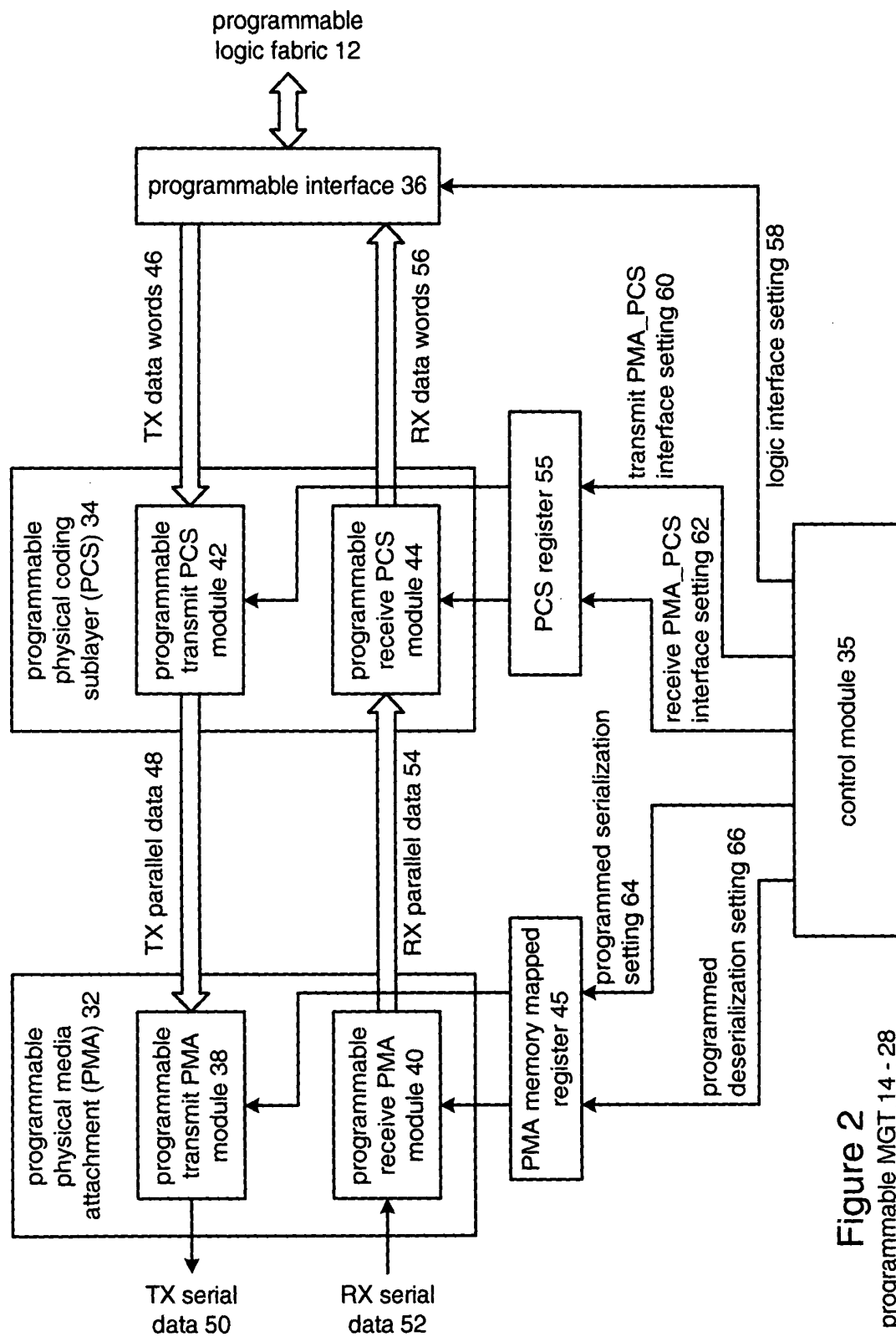


Figure 2
programmable MGT 14 - 28

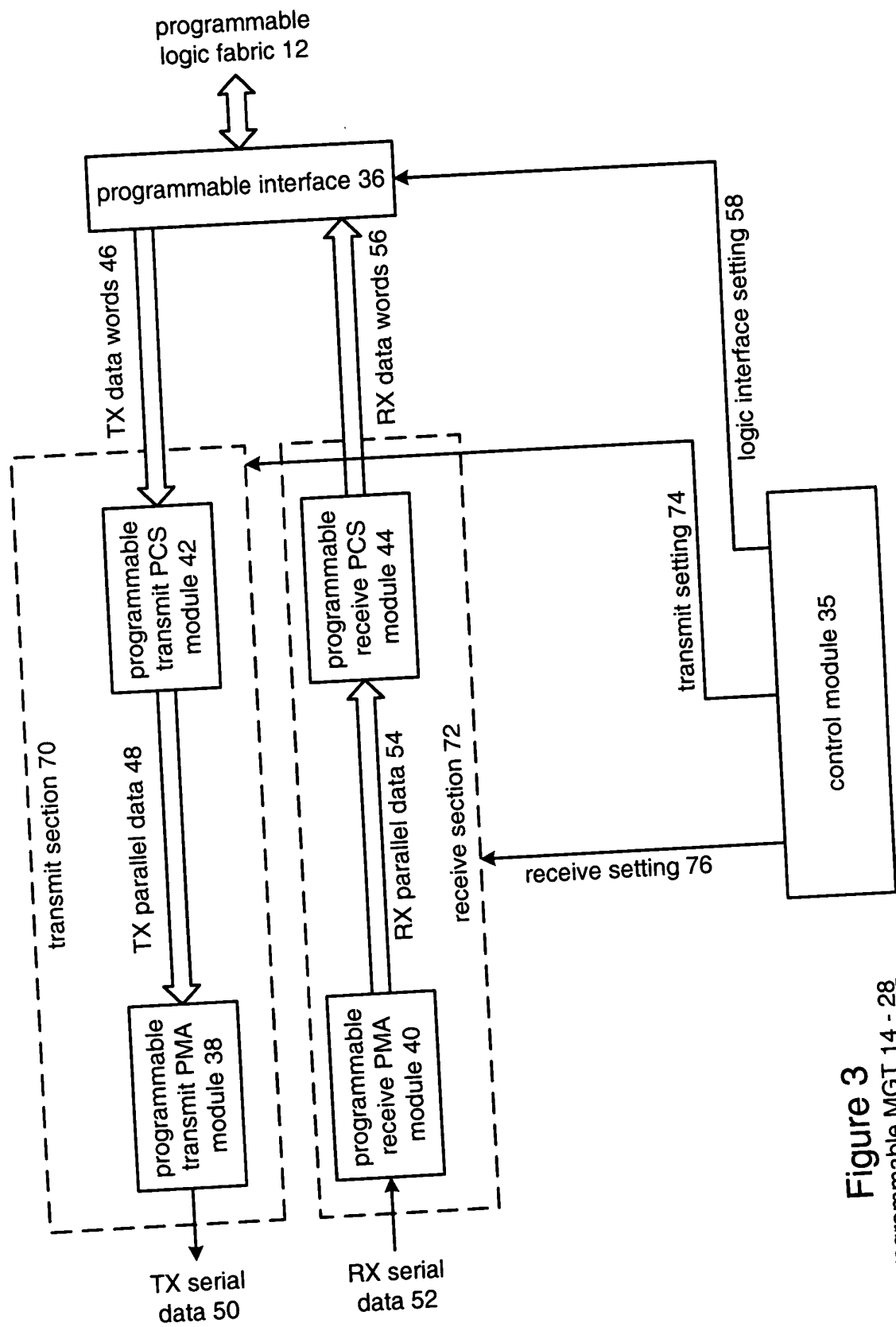


Figure 3
programmable MGT 14 - 28

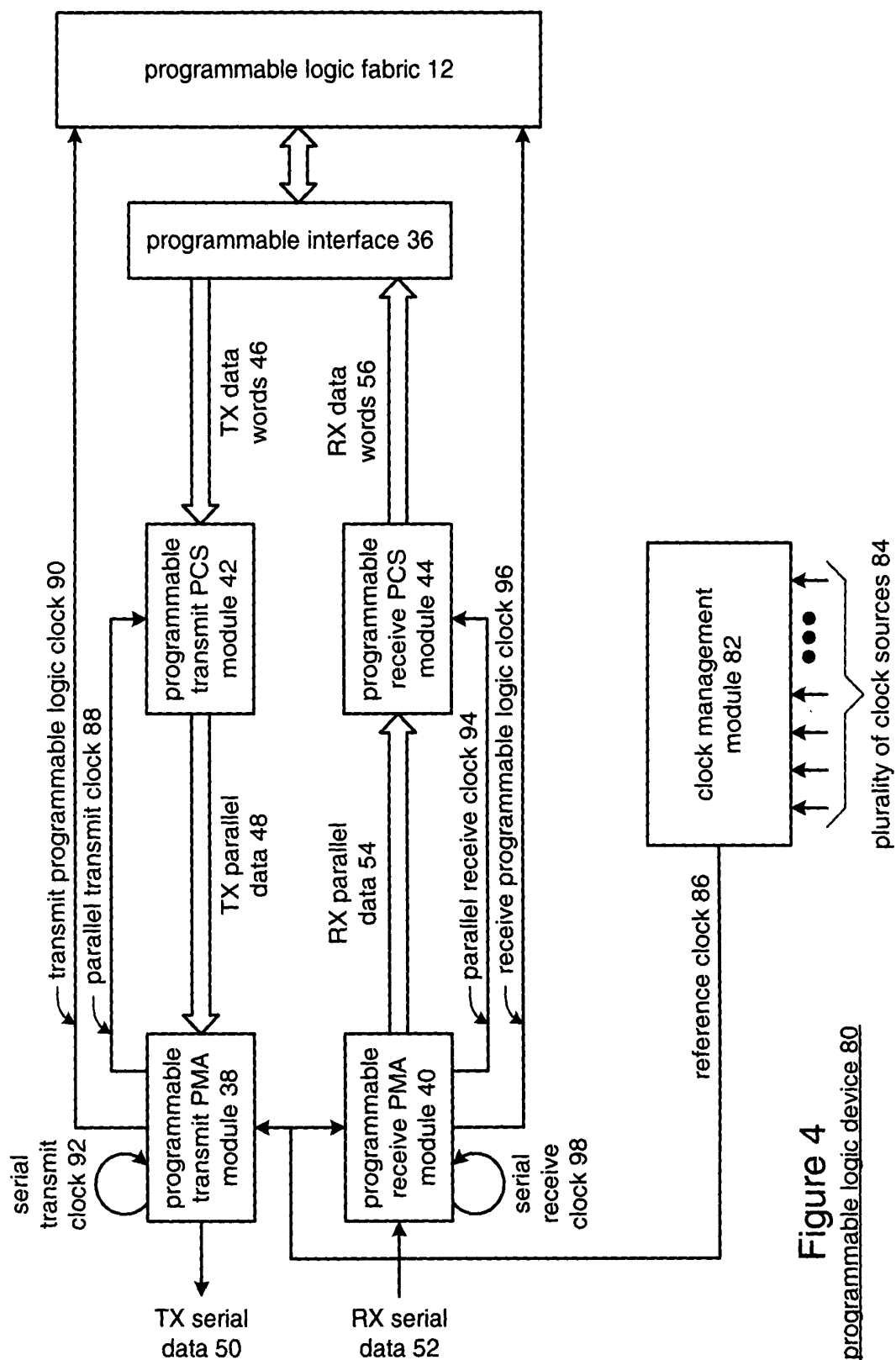


Figure 4
programmable logic device 80

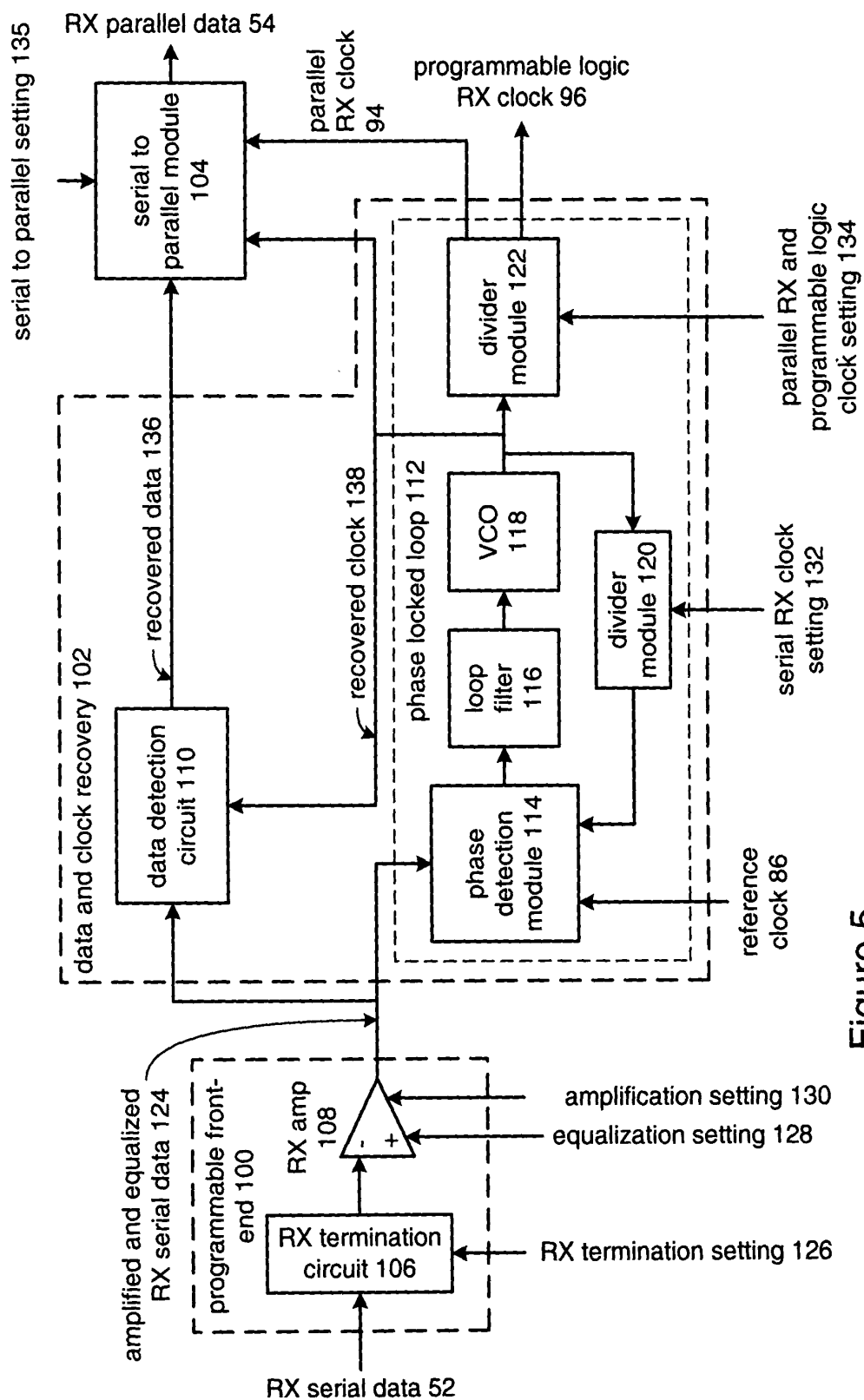


Figure 5
programmable receive
PMA module 40

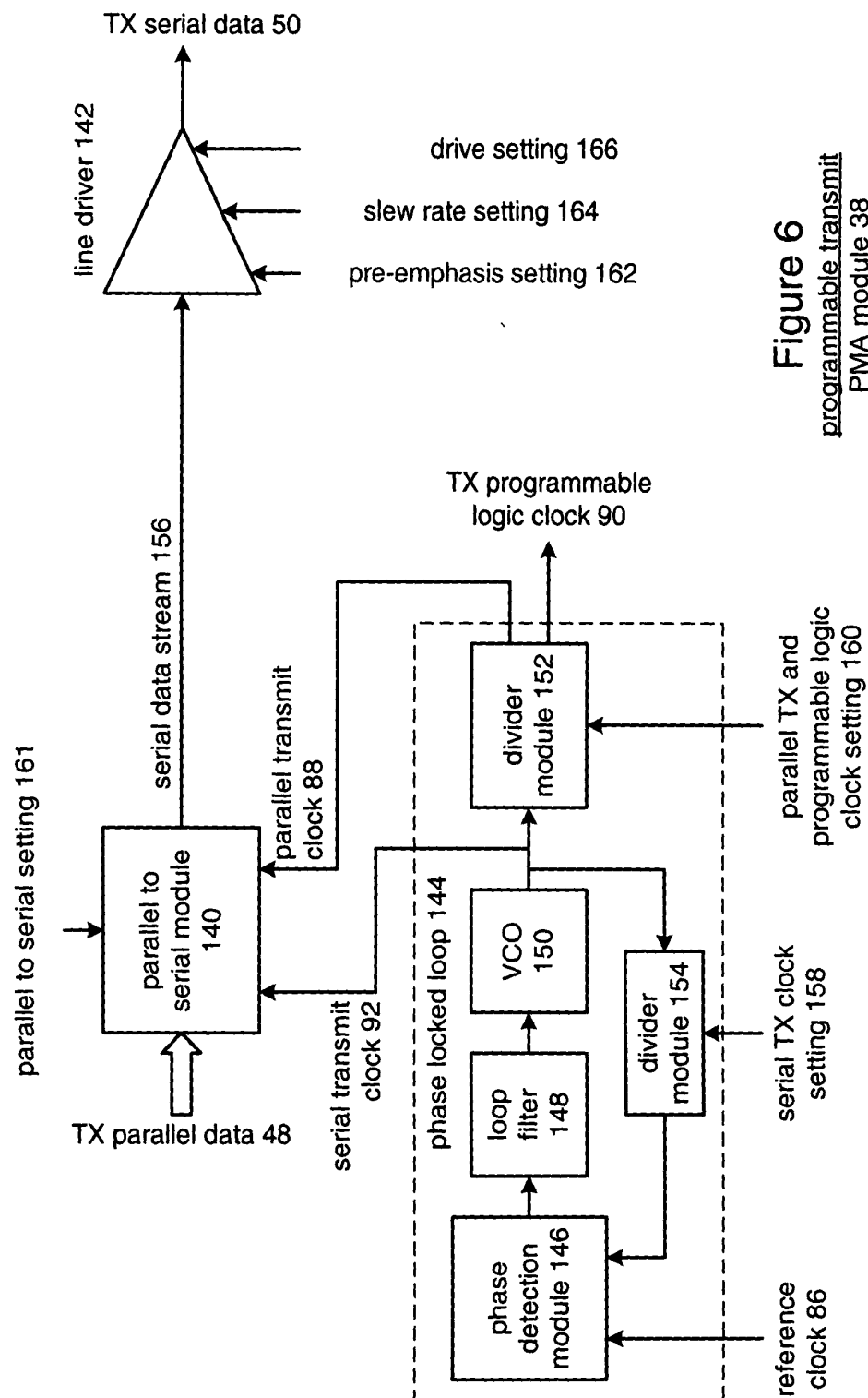


Figure 6
programmable transmit
PMA module 38

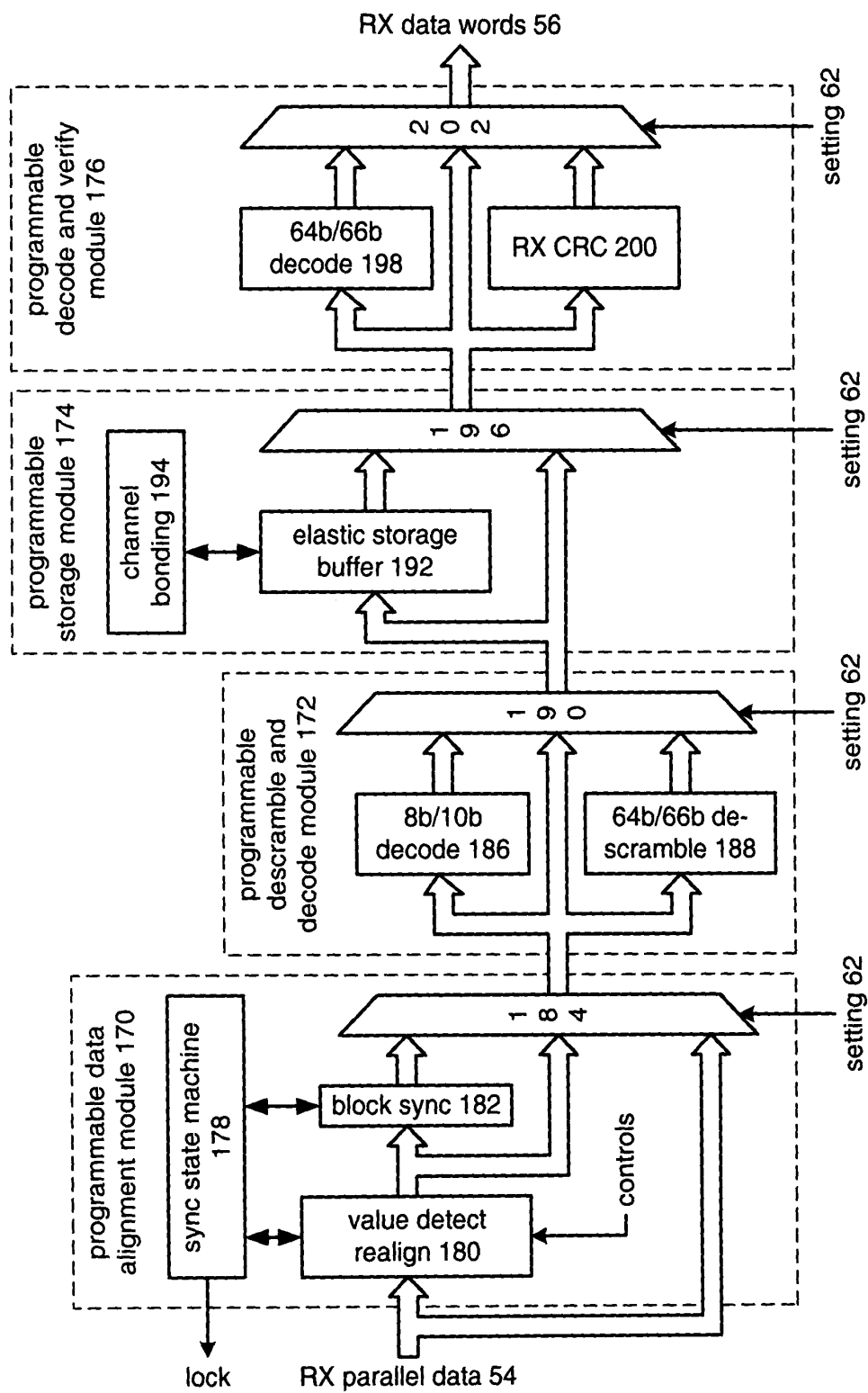


Figure 7
programmable receive PCS
module 44

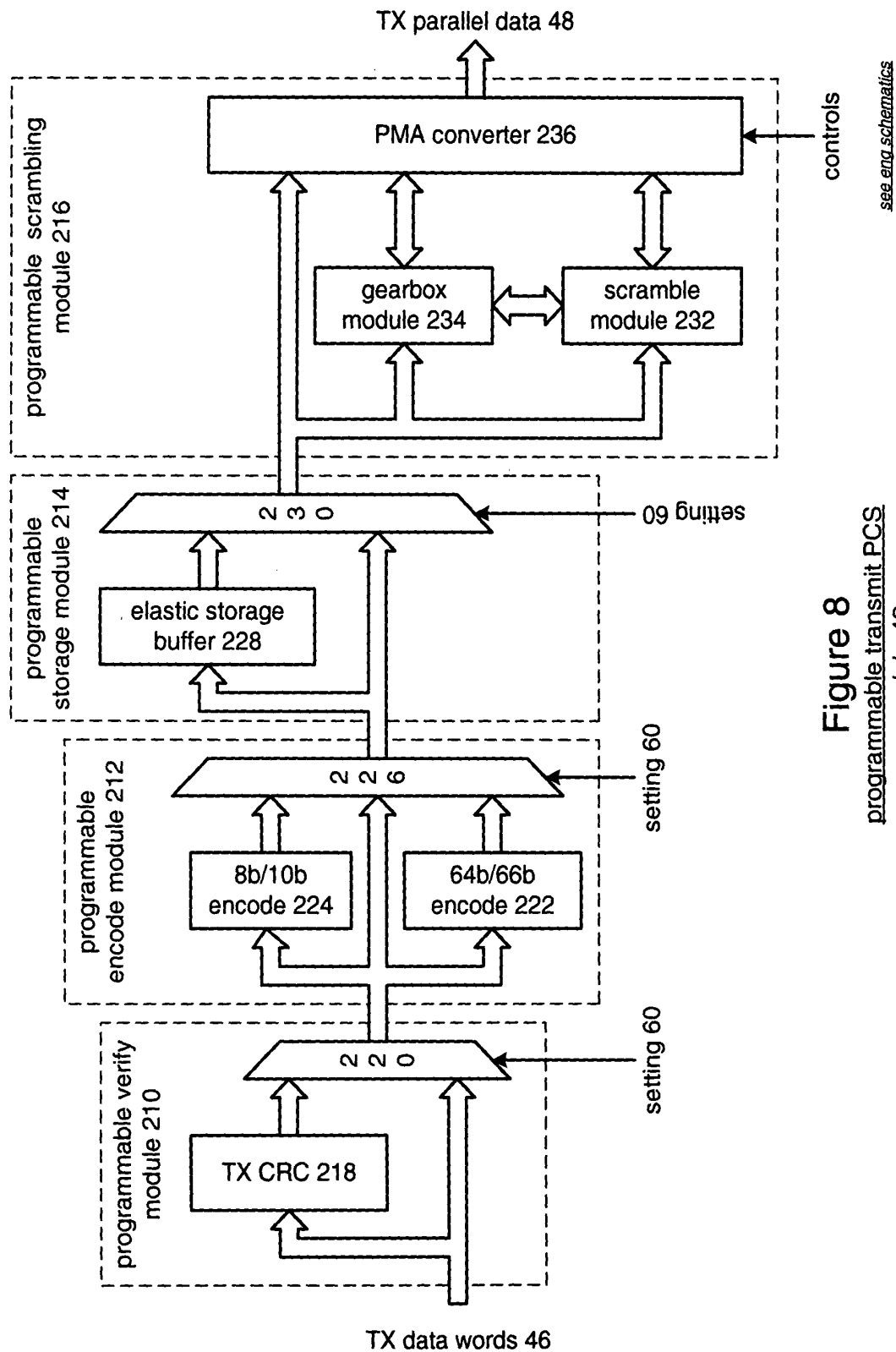


Figure 8
 programmable transmit PCS
 module 42

see eng schematics

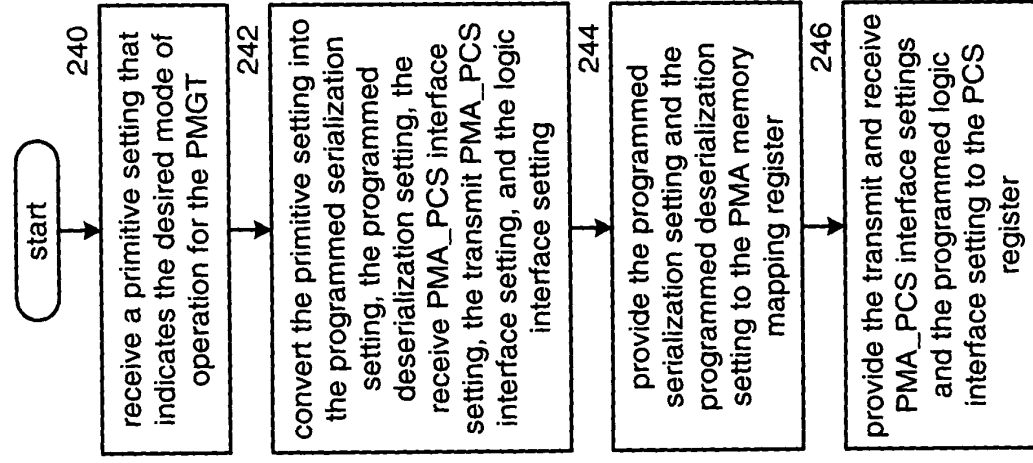


Figure 9

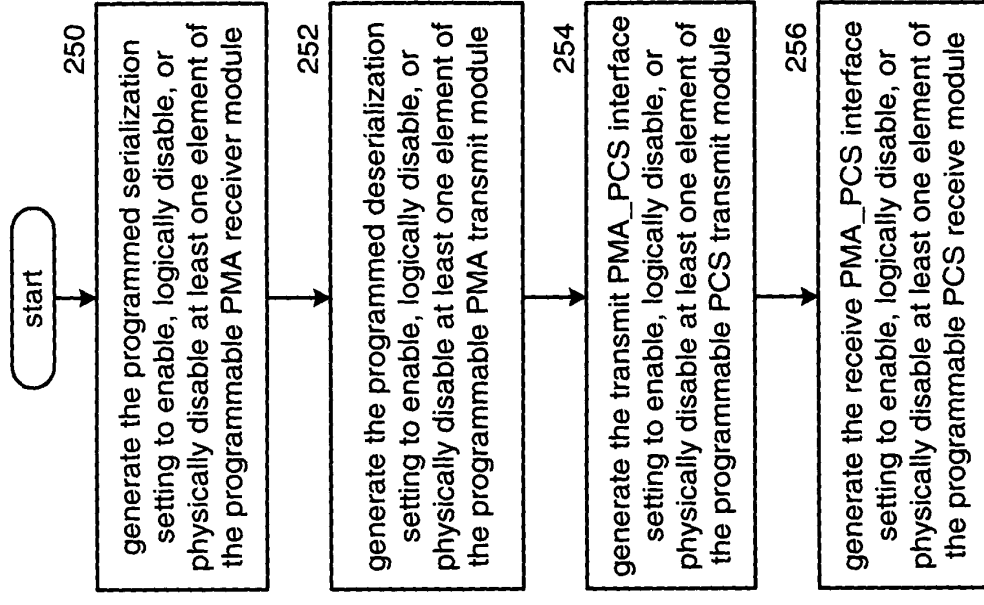


Figure 10

Address	Register Name	7	6	5	4	3	2	1	0
0x00	MASTERBIAS			VCODAC[5:0]					MASTERBIAS[1:0]
0x01	TXDIVRATIOLO					TXDIVRATIO[7:0]			
0x02	TXDIVRATIOHI						TXBUSWID	TXDIVRATIO[9:8]	
0x03	TXLOOPFILTER	IBOOST					TXLOOPFILTER[1:0]	TXLOOPFILTERC[1:0]	
0x04	TXMODECONTROL		TXREG[1:0]	TXVSEL[1:0]	TXVCOGAIN		TXVCODAC		TXCPI
0x05	TXOUTPUTLEVEL		SLEW	EMPOFF	PRDRVOFF		TXDOWNLEVEL[3:0]		
0x06	TXOUTPUTMODE			TXANASW	TXDIGSW		TXEMPHLEVEL[3:0]		
0x07	RXDIVRATIOLO					RXDIVRATIO[7:0]			
0x08	RXDIVRATIOHI						RXDIVRATIO[13:8]		
0x09	RXLOOPFILTER						RXLOOPFILTER[2:0]	RXLOOPFILTERC[1:0]	
0x0A	RXMODE0		RXREG[1:0]		RXVSEL[1:0]		RXVCOGAIN	RXVCODAC	RXCPI
0x0B	RXMODE1			RXCPCGAIN	RXVSELCP[1:0]				
0x0C	RXFEICONTROL0		RXFER[1:0]				RXFEI[1:0]		VSELAFE[1:0]
0x0D	RXFEICONTROL1								
0x0E	<reserved>								
0x0F	POWERCONTROL	TXDRVEN	RXEN	TXEN			RXANAEN	TXDIGEN	TXANAEN
0x10-0x3F	<reserved>								BIASEN

Figure 11
PMA memory mapped
register 45

Primitive	Standard	Serial Rate	Encoding	Fabric Interface
GT10_CUSTOM	-	≤10.3125 Gbps	Any	8b-80b
GT10_10GFC_8	10G Fibre Channel	10.51875 Gbps	64b/66b	64b@159.37MHz
GT10_10GFC_4	10G Fibre Channel	10.51875 Gbps	64b/66b	32b@318.75MHz
GT10_AURORAX_8	AuroraX	≤10.3125 Gbps	64b/66b	64b@156.25MHz
GT10_AURORAX_4	AuroraX	≤10.3125 Gbps	64b/66b	32b@312.5MHz
GT10_10GE_8	10GE 10GBase-R	10.3125 Gbps	64b/66b	64b@156.25MHz
GT10_10GE_4	10GE 10GBase-R	10.3125 Gbps	64b/66b	32b@312.5MHz
GT10_OC192_8	SONET OC-192	9.95328 Gbps	None	64b@155.52MHz
GT10_OC192_4	SONET OC-192	9.95328 Gbps	None	32b@311.02MHz

Figure 12A

Primitive	Standard	Serial Rate	Encoding	Fabric Interface
GT10_FCXAUI_4	10GFC (XAUI)	3.1875 Gbps	8b/10b	32b@79.6875MHz
GT10_FCXAUI_2	10GFC (XAUI)	3.1875 Gbps	8b/10b	16b@159.375MHz
GT10_FCXAUI_1	10GFC (XAUI)	3.1875 Gbps	8b/10b	8b@318.75MHz
GT10_XAUI_4	10GE (XAUI)	3.125 Gbps	8b/10b	32b@78.125MHz
GT10_XAUI_2	10GE (XAUI)	3.125 Gbps	8b/10b	16b@156.25MHz
GT10_XAUI_1	10GE (XAUI)	3.125 Gbps	8b/10b	8b@312.5MHz
GT10_AURORA_4	Aurora	3.125 Gbps	8b/10b	32b@78.125MHz
GT10_AURORA_2	Aurora	3.125 Gbps	8b/10b	16b@156.25MHz
GT10_AURORA_1	Aurora	3.125 Gbps	8b/10b	8b@312.5MHz

Figure 12B

Primitive	Standard	Serial Rate	Encoding	Fabric Interface
GT10_INFINIBAND_4	InfiniBand	2.5 Gbps	8b/10b	32b @ 62.5MHz
GT10_INFINIBAND_2	InfiniBand	2.5 Gbps	8b/10b	16b @ 125MHz
GT10_INFINIBAND_1	InfiniBand	2.5 Gbps	8b/10b	8b @ 250MHz
GT10_3GIO_4	PCI Express	2.5 Gbps	8b/10b	32b @ 62.5MHz
GT10_3GIO_2	PCI Express	2.5 Gbps	8b/10b	16b @ 125MHz
GT10_3GIO_1	PCI Express	2.5 Gbps	8b/10b	8b @ 250MHz
GT10_OC48_4	SONET OC-48	2.488 Gbps	None	32b @ 77.76MHz
GT10_OC48_2	SONET OC-48	2.488 Gbps	None	16b @ 155.52MHz
GT10_OC48_1	SONET OC-48	2.488 Gbps	None	8b @ 311.04MHz

Figure 12C